

### REMARKS

Claims 1-6, 8-12 and 21-24 are rejected. Claims 13-20, 25-31 are objected to. Claim 3 has been amended to correct a typographical error. Claims 1-6 and 8-31 are pending in the present application.

Applicant acknowledges and appreciates that the Examiner has withdrawn the previous rejections based upon Applicants' reply. New rejections have been provided to which Applicants respectfully respond below.

In the present Office Action the Examiner rejects claims 1-6, 9 and 21 under 35 U.S.C. 102(b) as being anticipated by *Godwin* (US 4,620,069). Applicant respectfully traverses this rejection.

The disclosure of *Godwin* does not anticipate or suggest all of the elements of claim 1 of the present invention. For example, claim 1 of the present invention calls for performing a calibration of a gain of at least a portion of a differential signal to affect the longitudinal balance associated with the differential signal. The calibration called for by claim 1 of the present invention includes determining a difference between a gain associated with a first portion of a differential signal and a gain associated with a second portion of a differential signal to determine the difference between the respective gains. The Examiner misapplies the disclosure of *Godwin* to argue anticipation of the elements of claim 1 of the present invention. *Godwin* simply does not disclose performing a calibration of a gain to affect the longitudinal balance, as called for by claim 1 of the present invention. The Examiner focuses on the gain/balance processor 6 of *Godwin*. See column 13, lines 15-16. However, the gain balance processor 6 of *Godwin* relates to performing three functions that include: measuring impedance; selecting

balance networks; and measuring the amplitude of a sinusoid. *See* column 13, lines 16-18. **Godwin** discloses that the measured amplitude is used in a gain-setting algorithm to set the gain of line circuits. *See* column 13, lines 18-20. However, the gain balance processor 6 clearly does not disclose calibrating the gain to affect a longitudinal balance, as called for by claim 1 of the present invention. In fact, **Godwin** simply does not disclose longitudinal balance whatsoever. Perhaps the Examiner mistakenly focused on the selecting of the balance networks performed by the gain balance processor 6. However, longitudinal balance is clearly not disclosed by **Godwin**.

The Examiner asserts that **Godwin** discloses determining the difference between respective gains of the first portion (which the Examiner refers to as the tip signal), and a second portion *i.e.*, ring, to determine whether the differences are outside the predetermined range. However, this is a misapplication of the disclosure and the claims of the present invention. **Godwin** does not disclose determining a gain associated with a forward path of a tip signal and a forward path of a ring signal, as called for by claim 4 of the present invention. Claim 1 calls for determining that there are respective gains between a first and second portions of a differential signal. The Examiner cites Figures 1, 5 and columns 14, lines 8-38 by arguing anticipation of this element. However, neither this passage, nor any other passage in **Godwin** discloses the determination of the difference between respective gains of a first and second portion of a differential signal. Contrary to the Examiner's assertion in the Office Action, the difference between the tip and the ring portions are not determined by **Godwin**. Accordingly, **Godwin** does not disclose determining the respective gains of a first portion and a second portion of a differential signal as called for by claim 1.

**Godwin** is merely directed to determining whether the subscriber line under test is loaded or non-loaded. The gain setting algorithm for setting the gain of the line circuit does not anticipate modifying at least one of the gains of the first portion and/or the second portion of a differential signal based upon the difference between the first and the second portions of the differential signal. There is simply no disclosure in **Godwin** to anticipate these features. **Godwin** refers to testing the sinusoid of known amplitude passed through a circuit under test and then analyzing the resultant signal to determine amplitude. See column 14, lines 39-44. If the test signal level is too low, the processor 6 signals the controller 8 to increase the gain. If the test signal level is too high, the processor 6 signals the controller 8 to lower the gain. However, this does not disclose modifying a gain of the first portion and/or modifying the gain of a second portion of a differential signal based upon the determination of the difference between the first and the second portions, as called for by claim 1 of the present invention. Therefore, **Godwin** simply does not anticipate all of the elements of claim 1 of the present invention. **Godwin** is simply directed to a completely different task of determining whether a subscriber line is loaded or non-loaded.

As described above, the gain adjustments disclosed by **Godwin** simply does not disclose the calibration called for by claims of the present invention. Similarly, claim 9 calls for an apparatus that performs the calibration of a gain based on determining the difference between the respective gains of a first and second portion of a differential signal and modifying at least one of the gain of the first or second portions. As described above, **Godwin** does not disclose these features. Therefore, claim 9 of the present invention is allowable. Claim 21 calls for a system that includes a line card that determines the difference between the gain of a first portion and

second portion of a differential signal and adjusting at least one of the gains associated with a first and second portions based upon the difference of the differential signal portions to affect longitudinal balance. As described above, *Godwin* simply does not disclose the gain adjustments of the first and second portions of the differential signal, nor does it disclose affecting the longitudinal balance. Therefore, for at least the reasons cited above, claims 1, 9, 10, and 21 are also not taught, disclosed or suggested by *Godwin*.

Independent claims 1, 9, and 21 are allowable for at least the reasons cited above. Further, dependent claims 2-6, and 8, which depend from independent claim 1 and dependent claims 22-31, which depend from claim independent claim 21, are also allowable for at least the reasons cited herein.

The Examiner rejected claims 1-6, 8, 9-12 under U.S.C. 103(a) as being unpatentable over *Sues* in view of IEEE Standard Test Procedures for Measuring Longitudinal Balance [ANSI/IEEE Std 455-1985] (*IEEE Std 455-1985*). Applicant respectfully traverses this rejection.

Applicants respectfully assert that *Sues* clearly does not teach, disclose or suggest all of the elements of claims of the present invention. Claim 1 of the present invention calls for determining the difference between the respective gains of the first and second portions and modifying at least one of the gains based upon a comparison. Simply adjusting the phase and the amplitude of the longitude signal such that they are balanced, does not read upon these elements. See claim 4, lines 56-61. In contrast to the disclosure of *Sues*, claims of the present invention call for modifying the gain by determining the respective gains of the first portion and the second portion of a differential signal. *Sues* simply does not disclose determining any type of a gain and

performing any type of adjustment of the gain. *Sues* is directed to reducing imbalance of a tip and ring signal. *Sues* discloses determining the amplitude and phase differences of a differential signal and adjusting the amplitude and the phase to produce a perfectly balanced longitude signal. See col. 4, lines 15-58. Clearly, the Examiner fails to point to any disclosure in *Sues* that anticipates the determination of a particular gain. For example, in order to satisfy the element of receiving a first portion of the differential signal and determining the gain associated with the first portion, the Examiner merely cites, column 3, lines 61-67, which merely refers to the reception of a tip and ring signal. No such disclosure exists in the Examiner's citation or anywhere in *Sues* that would anticipate or make obvious the determination of a particular gain. *IEEE Std 455-1985* does not make for these deficits.

*IEEE Std 455-1985* is directed to a calibration relating to balancing the internal impedance of the driving test circuit. *IEEE Std 455-1985* does not disclose calibration of a gain, as called for by claims of the present invention. Simply because *IEEE Std 455-1985* discloses "calibration" does not mean that it discloses or makes obvious the calibration of the gain, as called for by claims of the present invention. Further, as described above, *Sues* is missing more than just the calibration element of the claims. Therefore, the combination of *IEEE Std 455-1985* and *Sues* do not make obvious all of the elements of claim 1 of the present invention. Further, without using improper hindsight reasoning, those skilled in the art would not combine *IEEE Std 455-1985* and *Sues* to make obvious all of the elements of claims of the present invention. The Examiner is using hindsight reasoning, in light of the claims, to combine the teachings of *IEEE Std 455-1985* and *Sues* argue obviousness of the claims. In fact, the Examiner fails to point to any motivation that one skilled in the art would have had based upon

the disclosure in the cited prior art, that would lead a person skilled in the art to make obvious the elements of claim of the present invention. However, as described above, even if *IEEE Std 455-1985* and *Sues* were combined all of the elements of claim 1 of the present invention would not be made obvious. Further, the Examiner fails to show that there is a reasonable expectation of success if *IEEE Std 455-1985* and *Sues* were to be combined based upon their disclosures. Therefore, the Examiner has failed to show any one of the three required prongs for providing a *prima facie* showing of obviousness of claim 21 of the present invention. Therefore, claim 1 is allowable.

Additionally, claim 9 calls for an apparatus that comprises means for receiving a first portion of a differential signal and determining a gain, as well as determining the gain of a second portion of the differential signal, means for determining the difference between the respective gains and means for modifying at least one of the gains. As described above, *Sues* simply does not disclose determining the gains and comparing them and modifying one of the gains for at least the reasons cited above. *IEEE Std 455-1985* does not make up for this deficit. Further, claim 10 calls for a calibration unit that is capable of determining the gain associated with a first and a second portion of a signal and adjusting at least one of the gains based upon that difference. As described above, *Sues*, *IEEE Std 455-1985* and/or their combination do not teach or make obvious determining the gain associated with a first and a second portion of a signal and adjusting at least one of the gains based upon that difference. Therefore, for at least the reasons cited above claims 10 is not taught, disclosed, or make obvious by *Sues* and/or *IEEE Std 455-1985*.

Independent claims 1, 9, and 10 are allowable for at least the reasons cited above. Further, dependent claims 2-6 and 8, which depend from independent claim 1, and dependent claims 11-20, which depend from claim independent claim 10, are also allowable for at least the reasons cited herein.

The Examiner rejected claims 21-24 under 35 U.S.C. 103(a) as being unpatentable over *Sues* in view of IEEE Standard Test Procedures for Measuring Longitudinal Balance [ANSI/IEEE Std 455-1985] (*IEEE Std 455-1985*), and further in view of *Lynch* (US 6,724,880). Applicant respectfully traverses this rejection.

The combination of *Sues*, *IEEE Std 455-1985* and *Lynch* do not make obvious all of the elements of claims 21-24 of the present invention. The Examiner cites *Lynch* to make obvious the element of the line card of claim 21. However, as described above, the combination of *Sues* and *IEEE Std 455-1985* do not make obvious other elements not found in *Lynch*, such as a line card capable of performing a calibration of a gain that includes determining a difference between a gain associated with a first portion of a differential signal and a gain associated with a second portion of a differential signal to determine the difference between the respective gains. Adding the disclosure of *Lynch* does not make up for this deficit. Also, the Examiner is using improper hindsight reasoning, in light of the claims, to combine the teachings of *IEEE Std 455-1985*, *Sues*, and *Lynch* to argue obviousness of the claims. However, as described above, even if *Sues*, *IEEE Std 455-1985* and *Lynch* were combined all of the elements of claim 21 of the present invention would not be taught or make obvious.

Claim 21 calls for a system that comprises a line card, which is capable of performing a calibration of a gain, which includes determining the respective gains of a first and a second

portion of the differential signal. Claim 21 also calls for determining their difference and adjusting at least one of the gains based upon the difference, for at least the reasons cited above. As described above, the combination of *Sues* and *IEEE Std 455-1985* simply does not disclose determining the respective gains of a first portion and a second portion of a differential signal, determining their difference and modifying at least one of the gains based upon the difference. The simple discussion of adjusting the amplitude and phase of a particular signal in *Sues* does not anticipate the elements of claim 21, as described above. Therefore, *Sues* and *IEEE Std 455-1985* do not make obvious various elements of the claimed invention including the line card. Therefore, simply adding the disclosure of *Lynch* to provide the line card element does not make up for the deficit of the combination of *Sues* and *IEEE Std 455-1985*. *Lynch* does not disclose determining the differential respective gains of the first and second portions of the differential signal, and as described above, *Sues* and *IEEE Std 455-1985* do not make obvious these elements. Therefore, the combination of *Lynch*, *Sues* and *IEEE Std 455-1985* does not make obvious all of the elements of claim 21 of the present invention.

Further, those skilled in the art, without using improper hindsight reasoning, would not combine the teachings of *Sues*, *IEEE Std 455-1985* and *Lynch* to make obvious all of the elements of claim 21 of the present invention. Simply because both cited prior art references are directed to communications circuits does not support a contention that the detailed elements of claims of the present invention would be made obvious by their combination. In fact, the Examiner fails to point to any motivation that one skilled in the art would have had based upon the disclosure in the cited prior art, that would lead a person skilled in the art to make obvious the elements of claim 21 of the present invention. *Lynch* is merely directed to implementing an



N:1 sparing arrangement to connect a number of secondary lines to a bus, based upon a control signal. In contrast, *Sues* is directed to adjusting the amplitude and the gain of a differential signal to perfectly balance a differential signal, and *IEEE Std 455-1985* is merely directed at calibration of internal impedance. Therefore, there is no disclosure, without using improper hindsight reasoning, that would prompt one skilled in the art to combine *Lynch*, *Sues* and *IEEE Std 455-1985* to make obvious all of the elements of claim 21 of the present invention.

Further, the Examiner fails to show that there is a reasonable expectation of success if *Lynch*, *Sues* and *IEEE Std 455-1985* were to be combined based upon their disclosures. Therefore, the Examiner has failed to show any one of the three required prongs for providing a *prima facie* showing of obviousness of claim 21 of the present invention. Further, as described above, even if *Lynch*, *Sues* and *IEEE Std 455-1985* were combined, all of the elements of claim 21 of the present invention are not made obvious. Accordingly, claim 21 is allowable.

Independent claim 21 is allowable for at least the reasons cited above. Further, dependent claims 22-31, which depend from independent claim 21, are also allowable for at least the reasons cited herein.

The Examiner indicated that claims 13-20 and 25-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. However, in light of the arguments presented herein, all pending claims of the present invention are allowable.

Reconsideration of the present application is respectfully requested in view of the amendments and arguments set forth herein.

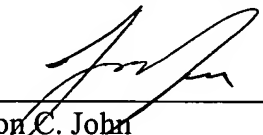
In light of the amendments and arguments provided herein, Applicant respectfully asserts that claims 1-6 and 8-31 of the present invention are allowable. Accordingly, a Notice of Allowance is respectfully solicited.

For at least the aforementioned reasons, it is respectfully submitted that all pending claims are in condition for immediate allowance. The **Examiner is invited to contact the undersigned attorney** at (713) 934-4069 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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